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NOTES ON ORTHOPTERA FROM NORTHERN AND CENTRAL MEXICO.

BY JAMES A. G. REHN.

The following study is based entirely on material in the collection of the Academy of Natural Sciences of Philadelphia. The States of Chihuahua, Jalisco, San Luis Potosi and Tamaulipas are represented in the series of about four hundred specimens studied. The most extensive series is that, comprising two hundred and sixty-four specimens, collected in Jalisco, chiefly at Guadalajara, in 1903, by Mr. J. F. McClendon, and purchased by the Academy. An exceedingly interesting collection of seventy-one specimens from San Luis Potosi and Tamaulipas was collected by Mr. M. E. Hoag, and this limited series has furnished a surprising number of new and little known forms. Three smaller collections are embraced in this study; a number of Guadalajara specimens collected and presented by Mr. C. H. T. Townsend; a few interesting individuals from Victoria, Tamaulipas, collected by S. N. Rhoads, and a series of Casas Grandes, Chihuahua, specimens, collected and presented by Dr. W. E. Hughes.

Family **BLATTIDÆ**.Genus **PSEUDOMOPS** Serville.**Pseudomops oblongata** (Linnaeus).

Tuxpan, Jalisco, September 4, 1903. (McClendon.) One male.

Pseudomops discoidalis (Burmeister).

Guadalajara, Jalisco. August 24 and September 18, 1903. (McClendon.) Two females.

These specimens agree with the descriptions and single Orizaba specimen examined, except that the antennæ are not annulate with whitish and the general color of the tegmina is more blackish.

Periplaneta americana (Linnaeus).

Guadalajara, Jalisco. August 24, 1903. (McClendon.) One male.

Family **MANTIDÆ**.Genus **STAGMOMANTIS** Saussure.**Stagmomantis limbata** (Haan).

Guadalajara, Jalisco. September 14 and 18, 1903. (McClendon.) One male, five females.

One of the females in this series represents the dark wine-color phase.

Genus **OLIGONYX**.

1869. *Oligonyx* Saussure, Mittheil. Schweiz. Ent. Gesell., III, pp. 58, 71. Included *minuta* Drury, *bicornis* and *filiformis* Saussure and *filum* Lichtenstein.

Oligonyx mexicanus Saussure and Zehntner.

1894. *Oligonyx mexicanus* Saussure and Zehntner, Biol. Cent.-Amer., Orth., I, p. 172, tab. IX, figs. 13-15. [Presidio, Mexico; Cubulco, Vera Paz, Guatemala.]

Guadalajara, Jalisco, August 23, 1903. (McClendon.) One male.

This specimen is referred here with some little doubt as the pronotum is slightly shorter and the tegmina slightly longer than Saussure and Zehntner's measurements, but these discrepancies are slight, and the specimen in all probability represents this species.

Genus **VATES** Burmeister.

Vates townsendi Rehn.

Guadalajara, Jalisco. August 9 and September 18, 1903. (McClendon.) One male, one female.

Family **PHASMIDÆ**.Genus **DIAPHEROMERA** Gray.

Diapheromera calcarata Burmeister.

Guadalajara, Jalisco. September 14, 1903. (McClendon.) Two males.

These specimens agree perfectly with individuals previously recorded from Alta Mira, Tamaulipas.¹

Genus **PSEUDOSERMYLE** Caudell.

1903. *Pseudosermyle* Caudell, Proc. U. S. National Museum, XXVI, p. 867. Type.—*Pseudosermyle banksii* Caudell.

Pseudosermyle tridens (Burmeister).

Tuxpan, Jalisco. September 4, 1903. (McClendon.) One male.

Guadalajara, Jalisco, September 18, 1903. (McClendon.) One female.

These specimens agree perfectly with a series of six specimens of both sexes from Cuernavaca, Morelos and Iguala, Guerrero.

Genus **BOSTRA** Stål.

Bostra jaliscensis n. sp.

Type: ♂; Tuxpan, Jalisco, Mexico. September 4, 1903. (J. F. McClendon.) [Coll. of Acad. Nat. Sci. Phila.]

Related to *B. incompta* Rehn,² from Costa Rica, but differing in the

¹ *Proc. Acad. Nat. Sci. Phila.*, 1904, p. 50.

² *Proc. Acad. Nat. Sci. Phila.*, 1904, p. 57.

smaller size, more elongate and posteriorly constricted head, more elongate ninth dorsal abdominal segment, heavier cerci and more produced inferior angle of the subgenital opercle. No close relationship exists with *B. dorsuaria* Stål or *turgida* (Westwood).

Size medium; form very elongate; surface smooth. Head distinctly longitudinal, the posterior portion with a marked but gradual constriction; eyes elliptical, not prominent; ocelli absent; antennæ with the basal joint longitudinal, depressed, external margin not distinctly sulcate. Pronotum slightly shorter than the head, slightly expanded posteriorly; cruciform impression weak, the central portion more apparent than the extremes; lateral margins distinctly cingulate. Mesonotum very slender and elongate, equal to the median femora. Metanotum (with median segment) two-thirds the length of the mesonotum; median segment slightly shorter than the remaining portion of the metanotum and slightly longer than the first abdominal segment. Abdomen with all the six basal segments quite elongate, the fifth slightly and the sixth distinctly shorter than any of the basal four; seventh, eighth and ninth segments subequal in length, the seventh expanded apically, the eighth constricted apically, the ninth subequal and with the apical half bearing several distinct longitudinal sulci, apical margin sinuato-truncate; cerci simple, straight, somewhat compressed, slightly shorter than the ninth dorsal abdominal segment; subgenital opercle compressed, not exceeding the apical margin of the eighth dorsal segment, inferior angle produced into a distinct claw-like point. Anterior femora equal to the mesonotum, pronotum and half of the head in length, straight, distinctly carinate, basal flexure short but distinct; tibiæ exceeding the femora by the length of the pronotum, very slender, carinate; metatarsi slender, exceeding the remaining tarsal joints in length, superior surface with a narrow and rather indistinct longitudinal sulcus. Median femora equal to the mesonotum in length, slightly arcuate; tibiæ exceeding the femora in length; metatarsi slightly shorter than the remaining tarsal joints, sulcus as in the anterior metatarsi. Posterior femora reaching to the middle of the fifth abdominal segment, slender, very slightly arcuate; tibiæ slightly exceeding the femora; metatarsi subequal with the remaining tarsal joints, no distinct sulcus above.

General color drab, suffused on the apex of the abdomen with, and a broad lateral streak on the head cream color; eyes mottled cinnamon and umber; postocular streak on head and pronotum hair-brown; limbs drab, more or less distinctly annulate with broad bands of dull brownish, some of the pale annuli wood-brown.

Measurements.

Total length,	96 mm.
Length of head,	4.3 "
Length of pronotum,	3.3 "
Length of mesonotum,	24.3 "
Length of metanotum (including median segment),	15.5 "
Length of median segment,	7 "
Length of abdomen,	49 "
Length of anterior femora,	28.5 "
Length of anterior tibiæ,	33.5 "
Length of median femora,	24.5 "
Length of posterior femora,	29.5 "

Genus **PARABACILLUS** Caudell.

1903. *Parabacillus* Caudell, Proc. U. S. Nat. Mus., XXVI, p. 865.

Type.—*Bacillus coloradus* Scudder.

Parabacillus palmeri (Caudell).

1902. *Bacillus palmeri* Caudell, Ent. News., XIII, p. 274. [Durango, Mexico.]

Guadalajara, Jalisco. July 22 and August 16, 1903. (McClendon.)
Four females.

Family **ACRIDIDÆ**.Subfamily **ACRIDINÆ**.Genus **ACHURUM** Saussure.

1861. *Achurum* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 313.

Type.—*Truxalis sumichrasti* Saussure.

Achurum sumichrasti (Saussure).

1861. *Tr[uxalis] Sumichrasti* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 313. [Temperate Mexico.]

Guadalajara, Jalisco. August 20 and September 18, 1903. (McClendon.) Two females.

Genus **SYRBULA** Stål.

1873. *Syrbula* Stål, Recensio Orthopterorum, I, p. 91, 102.

Included *Orycoryphus montezuma* Saussure and *Syrbula leucocerca* Stål.

Syrbula pacifica Bruner.

1904. *Syrbula pacifica* Bruner, Biol. Cent.-Amer., Orth., II, p. 44. [Tepic.]

Guadalajara, Jalisco. September 14 and 18, 1903. (McClendon.)
Male and female.

Syrbula eslavæ Rehn.

1900. *Syrbula eslavæ* Rehn, Trans. Amer. Ent. Soc., XXVII, p. 90. [Eslava, D. F., Mexico.]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One male, one immature female.

Genus **MACHÆROCERA** Saussure.

1859. *Machærocera* Saussure, Revue et Magasin de Zoologie, 2e ser., XI, p. 391.

Type.—*M. mexicana* Saussure.

Machærocera mexicana Saussure.

1859. *M[achærocera] mexicana* Saussure, Revue et Magasin de Zoologie, 2e ser., XI, p. 391. ["Mexico calida."]

Alta Mira, Tamaulipas. June 26, 28 and 30, 1903. (M. E. Hoag.) Two males and one female.

A study of twenty-two specimens of this species from Tamaulipas, Vera Cruz and Morelos furnishes no constant diagnostic character for separating the Vera Cruz form as Thomas's *sumichasti*, as has been done by Bruner.³ A pair of this species, labelled in Saussure's handwriting and presented by him, the male from "Mexique; Sumichrast," and the female "Orizaba, reg. temp. Sumichrast," agree with the rather large series studied. As the latter specimens are authoritatively determined and agree with specimens from Jalapa as well as Alta Mira, I feel justified in considering them all one species.

Machærocera pacifica Bruner.

1904. *Machærocera pacifica* Bruner, Biol. Cent.-Amer., Orth., II, p. 51. [Tepic, on the Pacific slope, not far from San Blas.]

Guadalajara, Jalisco. August 24, September 14 and 18, 1903. (McClendon.) Five males.

A fairly well-marked species, distinguished by the slender posterior femora and rather heavier antennæ.

Genus **AMBLYTROPIDIA** Stål.

1873. *Amblytropidia* Stål, Recensio Orthopterorum, I, pp. 93, 107.

Type.—*A. ferruginosa* Stål.

Amblytropidia ingenua Bruner.

1904. *Amblytropidia ingenua* Bruner, Biol. Cent.-Amer., Orth., II, p. 67. [Orizaba; Chilpancingo, Guerrero; Cuernavaca, Morelos.]

Cuernavaca, Morelos. September, 1900. (Barrett.) One female.

This individual is rather larger than Bruner's maximum measurements.

³ *Biol. Cent.-Amer.*, Orth., II, p. 51.

Amblytropidia elongata Bruner.

1904. *Amblytropidia elongata* Bruner, Biol. Cent.-Amer., Orth., II, p. 68. [Tepic, Jalisco.]

Tuxpan, Jalisco. September 4, 1903. (McClendon.) One female.

The following key based on the female will serve to separate several species studied:

A.—Fastigium broad; eye ovoid; disk of the pronotum with the greatest width about two-thirds the length; posterior margin of the pronotum obtuse-angulate; lateral lobes of the pronotum higher than long.

B.—Form heavy; fastigium rather blunt; face somewhat rounded; posterior femora heavy, the slender distal portion less than one-third the total length,

occidentalis (Saussure).

BB.—Form rather slender; fastigium acute; face distinctly angulate; posterior femora with the slender apical portion more than one-third the total length, . . . *mysteca* (Saussure).

AA.—Fastigium rather narrow; eye elongate-ovoid; disk of the pronotum with the greatest width but slightly more than half the length; posterior margin very broadly obtuse-angulate; lateral lobes longer than high, . . . *ingenita* Bruner.

Genus **ORPHULELLA** Giglio-Tos.

1894. *Orphulella* Giglio-Tos, Bollett. Mus. Zool. Anat. Comp., IX, No. 184, p. 10.

Based on *O. punctata* (DeGeer), *intricata* (Stål), *gracilis* and *elegans* Giglio-Tos, of which the first may be justly considered the type.

Orphulella tepaneca (Saussure).

1861. *St[enobothr]us tepanecus* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 319. [Mexico.]

Alta Mira, Tamaulipas. June 24 and 25, 1903. (M. E. Hoag.) Two females.

Genus **DICHROMORPHA** Morse.

1896. *Dichromorpha* Morse, Psyche, VII, pp. 326, 383.

Type.—*D. viridis* (Scudder).

Dichromorpha viridis (Scudder).

1862. *C[hloëaltis] viridis* Scudder, Boston Jour. Nat. Hist., VII, p. 455. [Connecticut.]

Guadalajara, Jalisco. August 6, 24, September 14 and 18, 1904. (McClendon.) Sixteen males, thirteen females.

These specimens are not typical *viridis*, and more material and study may show that they represent another form. The tegmina and wings reach to, or almost to, the tip of the abdomen in all the females, while the males have those members considerably exceeding the apex of the

abdomen. A number of other characters exhibit more or less apparent differences, such as the shape of the eye and the vertex, the more gibbous anterior and median femora of the male, and the longer posterior limbs.

Genus **BOOPEDON** Thomas.

1870. *Boopedon* Thomas, Proc. Acad. Nat. Sci. Phila., 1870, p. 83.

Included *B. nigrum* Thomas (= *Gryllus nubilus* Say) and *B. flavofasciatum* Thomas.

Boopedon nubilum (Say).

1825. *Gryllus nubilus* Say, Jour. Acad. Nat. Sci. Phila., IV, p. 308. [Arkansas . . . near the base of the Rocky Mountains"; probably referring to the country at the exit of the Arkansas River from the mountains.]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.) Two males.

These individuals are both of the black type of coloration, and in one the pregenicular annuli of the posterior femora are absent.

Boopedon hoagi n. sp.

Type: ♂; La Joya, San Luis Potosi, Mexico. August 10, 1903. (M. E. Hoag.)

Allied to *B. nubilum*, but differing in the smaller head and the longer and more distinctly carinate pronotum, the metazona of which is strongly punctate.

Size medium (equal to the male of *nubilum*); form moderately elongate, subbrachypterous, as is usual in the genus. Head of medium size, face moderately declivent, occiput rounded, hardly elevated above the pronotum, no distinct median carina present but with an exceedingly faint one on the fastigium; fastigium considerably broader than long, anteriorly obtuse-angulate, not excavated, margins very slightly elevated; lateral foveolæ linear, slightly marked; interspace between the eyes hardly narrower than the fastigium; eye subovate, anteriorly somewhat truncate, slightly longer than the infra-ocular portion of the genæ; frontal costa moderately broad, subequal, not quite reaching the clypeus, slightly excavated at the ocellus; antennæ about equal to the tegmina in length, somewhat depressed in the apical half, apex acute. Pronotum with the disk subequal in width, prozona and metazona subequal in length; anterior margin subtruncate, posterior margin obtuse-angulate; median carina very distinct, moderately high, lateral angles sharp but not truly carinate; metazona strongly punctate; lateral lobes higher than long, the inferior margin obtuse-angulate. Tegmina slightly shorter than the abdomen; greatest width one-third the distance from the base, costal expansion very large;

apex rounded. Wings equal to the tegmina in length. Abdomen with the apex not elevated; subgenital plate moderately acuminate; supranal plate triangular, somewhat convex and with a slight median longitudinal depression; cerci simple, styliform, apex rather blunt. Anterior and median limbs slender for the general size. Posterior femora robust, inflated basally, distal fourth subequal, scalariform markings obtuse; posterior tibiae slightly shorter than the femora.

General color blackish, a faint line from the superior margin of the eye, a pregenicular annulus on the posterior femora and a proximal annulus on the posterior tibiae dull ochraceous; distal half of the posterior tibiae flesh-colored, the spines blackish apically; anterior and median limbs brownish sprinkled with black spots; antennae flesh on the basal third, blackish beyond.

Measurements.

Length of body,	20.5 mm.
Length of pronotum,	5.7 "
Greatest dorsal width of pronotum,	3.2 "
Length of tegmina,	11.2 "
Length of posterior femora,	15.5 "

The type and an immature topotypic male are the only specimens examined. I have dedicated this species to the collector, the well-known entomologist, Mr. M. E. Hoag.

***Boopedon gracile* n. sp.**

Type: ♂; Alta Mira, Tamaulipas. June 25, 1903. (M. E. Hoag.)

Quite distinct from any of the previously known species of the genus, and easily recognized by the slender form, fully developed tegmina and wings, and distinct carinae of the fastigium and pronotum.

Size medium; form slender. Head of moderate size; occiput slightly flattened, but elevated somewhat above the pronotum; fastigium slightly broader than long, anteriorly rectangulate, shallowly but distinctly excavated, a distinct and sharp median carina present, margins as distinct as the median carina; interspace between the eyes about equal to the width of the fastigium; frontal costa rather broad, slightly constricted below the ocellus, reaching the clypeus, slightly excavated at and for a slight distance below the ocellus; eye ovate, subtruncate anteriorly, longer than the infra-ocular portion of the genae; antennae slightly more than half as long again as the head and pronotum. Pronotum rather narrow, disk about half as long again as the greatest (posterior) width; anterior margin rotundato-truncate, posterior margin obtuse-angulate and with the apex rounded; metazona slightly

longer than the prozona; median carina very distinct, sharp; lateral carinæ distinct anteriorly, rounded on the metazona, which latter is very closely punctate; lateral lobes higher than broad, inferior margin obtuse-angulate, rounded posteriorly. Tegmina considerably exceeding the apex of the abdomen and but very slightly shorter than the tips of the posterior femora, subequal in width, the costal field moderately expanded; apex obliquely rotundato-truncate. Wings equal to the tegmina in length. Abdomen not recurved apically. Posterior femora slender (for the genus), tapering through the entire length; posterior tibiæ slightly shorter than the femora.

General color bistre; the top of the head, disk of the pronotum and anal field of the tegmina broccoli-brown; lateral lobes of the prozona and the genæ shining blackish; face and antennæ wood-brown, the latter infuscated in the apical half. Pronotum with the lateral carinæ marked anteriorly with buff. Anterior limbs pale cinnamon. Posterior femora blackish externally and inferiorly, except for a pregenicular annulus of ochraceous, superior and internal faces ochraceous with four blackish bars, the two proximal ones of which do not join the blackish external face, their distribution being, one genicular, one postmedian, one premedian and the other basal; posterior tibiæ blackish proximally with a broad dull ochraceous annulus, followed by a blackish annulus, the remainder dull isabella color suffused with blackish, the spines all blackish apically; tarsi ochraceous.

Measurements.

Length of body	22	mm.
Length of pronotum,	5	"
Greatest dorsal width of pronotum,	3	"
Length of tegmina,	18.7	"
Length of posterior femora,	16	"

The type is the only specimen of the species examined.

Genus **PLECTROTETTIX** McNeill.

1897. *Plectrotettix* McNeill, *Psyche*, VIII, p. 71.

Proposed to replace *Plectrophorus* McNeill (preoccupied) and including *P. viatorius* (Saussure) and *P. gregarius* (Saussure).

Plectrotettix viatorius (Saussure).

1861. *S[enobothrus] viatorius* Saussure, *Revue et Magasin de Zoologie*, 2e ser., XIII, p. 317. ["In tota Mexico occurrunt et gregibus copiosus campis damnum inferrunt."]

Guadalajara, Jalisco. June 28, July 17 and September 18, 1903. (McClendon.) Four males, six females.

Zapotlanejo, Jalisco. July 31, 1903. (McClendon). One male.

Zapotlan, Jalisco. July 7, 1902. (C. H. T. Townsend.) Four males, five females.

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) Two females.

Alta Mira, Tamaulipas. June 24, 1902. (M. E. Hoag.) One male.

Genus **AULOCARA** Scudder.

1 76. *Aulocara* Scudder, Bull. U. S. Geol. Surv. Terr., II, p. 266.

Type.—*A. cæruleipes* Scudder = *A. elliotti* (Thomas).

Aulocara elliotti (Thomas).

1870. *S[tauronotus] Elliotti* Thomas, Proc. Acad. Nat. Sci. Phila., 1870, p. 82. [Eastern Colorado.]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.) One female.

Subfamily CEDIPODINÆ.

Genus **ARPHIA** Stål.

1873. *Arphia* Stål, Recensio Orthopterorum, I, pp. 113, 119.

Included *A. sulphurea* (Fabricius) and *A. sanguinaria* Stål, of which the former may be considered the type.

Arphia simplex Scudder.

1875. *Arphia simplex* Scudder, Proc. Boston Soc. Nat. Hist., XVII, p. 514. [Dallas, Texas.]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One male, two females.

Alta Mira, Tamaulipas. June 24 and 25, 1903 (M. E. Hoag.) Four males.

Victoria, Tamaulipas. January 14 or 15, 1903. (S. N. Rhoads.) Two males.

The male specimens are slightly smaller than several Texan representatives examined, but their measurements are about equal to those given by Scudder. The females, however, have the tegmina distinctly shorter than Texan individuals, but otherwise appear to fully represent this species.

Arphia truculenta n. sp.

Type: ♂; Guadalajara, Jalisco, Mexico. September 18, 1903. (McClendon.)

Allied to *A. nietana* Saussure,⁴ but differing in the slenderer posterior femora, the broader and less sulcate frontal costa, and the more acute posterior process of the pronotum.

⁴ Comparisons made with specimens of *nietana* from Eslava, D. F.

Size medium; form robust. Head with the vertex subhorizontal; scutellum of the vertex as broad as long, not appreciably excavated except for the distinct transverse depression, rugulose, median carina continued posteriorly on to the occiput, lateral carinae of the scutellum low, but distinct; lateral foveolæ subquadrate, slightly excavated; frontal costa broad at and below the ocellus, slightly constricted below the latter, superiorly contracted and with an indistinct median carina, broadly sulcate at and for quite a distance below the ocellus; eye subovate, equal in length to the infraocular portion of the genæ; antennæ of medium length, slender basally, apically somewhat expanded and depressed. Pronotum with the disk of the prozona rather inflated, that of the metazona depressed; median carina distinct, but not high, subequal in height; anterior margin very obtusely angulate, posterior margin rectangulate with the angle rounded and the remainder of the margin rather sinuate; surface of the prozona rugose, of the metazona longitudinally verrucose; lateral lobes deeper than wide, subequal in breadth, inferior margin rounded with the angles not pronounced. Interval between the metasternal lobes slightly longer than broad. Tegmina exceeding the posterior femora by about one-fifth their total length, rather broad, apex obliquely truncate; dilation of the costal margin basal and very pronounced; intercalary vein nearer the ulnar vein proximally, nearer the median vein distally. Wings with the apex slightly falcate. Posterior femora rather slender (for the genus), the apical half tapering without any curve; posterior tibiæ slightly shorter than the femora.

General color wood-brown strongly maculate and closely punctulate with bistre. Head with the portion posterior to and below the eye blackish; antennæ blackish apically; eyes Prout's brown. Pronotum with the lateral lobes blackish. Pleura blackish. Tegmina very distinctly and closely punctulate with the overlying shade except the axillary field which is unicolor. Wings with the disk orange-chrome; fuscous band, which is very much circumscribed, limited to little more than the apical fourth of the wing and failing to reach the posterior margin, blackish in color, the tip of the same color and separated by a small subhyaline area from the band itself; ulnar tænia broad, subequal and solid in color, reaching more than two-thirds the way to the base of the wing; costal margin colored as on the disk. Posterior femora externally with indications of a preapical annulus; genicular region blackish; internal face blackish with two transverse dull yellowish bands. Posterior tibiæ dull cinnamon; spines tipped with black.

Measurements.

Length of body,	22.2 mm.
Length of pronotum,	6 "
Greatest width of pronotum,	4 "
Length of tegmina,	23 "
Greatest width of tegmina,	4.5 "
Length of wings,	22.2 "
Length of posterior femora,	16.5 "

Three males of this species have been examined, all from Guadalajara. They agree perfectly in structure, but exhibit some diversity in coloration. The black on the lateral lobes of the type is not so distinct in the other specimens, and the general features of the color pattern more subdued in both of them.

Genus **ENCOPTOLOPHUS** Scudder.

1875. *Encoptolophus* Scudder, Proc. Boston Soc. Nat. Hist., XVII, p. 478.

Type.—*Edipoda sordida* Burmeister.

Encoptolophus costalis (Scudder).

1862. *Æ[dipoda] costalis* Scudder, Boston Jour. Nat. Hist., VII, p. 473. [Texas.]

Alta Mira, Tamaulipas. June 24, 1903. (M. E. Hoag.) One female.

Zapotlanejo, Jalisco. July 31, 1903. (McClendon.) Three males, three females.

Juanacatlan, Jalisco. July 22, 1903. (McClendon.) One female.

This series is quite uniform structurally, and such color differences as exist are very slight. The Alta Mira specimen has a more reddish cast when compared with Jalisco specimens of the same sex, but this coloration is found in the Jalisco males.

Encoptolophus parvus Scudder.

1875. *Encoptolophus parvus* Scudder, Proc. Boston Soc. Nat. Hist., XVII, p. 480. [Dallas, Texas.]

Guadalajara, Jalisco. August 8 and 20, 1903. (McClendon.) One male, one female.

Genus **HIPPISCUS** Saussure.

1861. *Hippiscus* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 398.

Type.—*Edipoda (Hippiscus) ocelote* Saussure.

Hippiscus ocelote Saussure.

1861. *Æ[dipoda] (Hippiscus) ocelote* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 398. [Mexico.]

Guadalajara, Jalisco. September 14 and 18, 1903. (McClendon.) Eight males and eight females.

Saussure has recorded this species from Cordova and Guanajuato.

Hippiscus zapotecus Saussure.

1884. *X[anthippus] zapotecus* Saussure, Prodr. *Ædipod.*, p. 91. ["*Agæ mexicanus*."]

Guadalajara, Jalisco. August 17, 1903. (McClendon.) One female.

Genus **LEPRUS** Saussure.

1861. *Leprus* Saussure, *Revue et Magasin de Zoologie*, 2e ser., XIII, p. 398.

Type.—*Edipoda (Leprus) elephas* Saussure.

Leprus elephas Saussure.

1861. *Æ[dipoda] (Leprus) elephas* Saussure, *Revue et Magasin de Zoologie*, 2e ser., XIII, p. 398. [Mexico.]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One male, three females.

These specimens exhibit considerable variation in the extent of the inflation of the prozona and in the pattern and intensity of the coloration.

Genus **TROPIDOLOPHUS** Thomas.

1873. *Tropidolophus* Thomas, *Synopsis Acrididæ N. Amer.*, p. 138.

Type.—*Tropidolophus formosus* (Say).

Tropidolophus formosus (Say).

1825. *Gryllus formosus* Say, *American Entomology*, II, Pl. 34, text page four (unnumbered). [Colorado: "About an hundred and fifty miles from the mountains, on the banks of the Arkansaw river."]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.) One female.

Genus **SPHARAGEMON** Scudder.

1875. *Spharagemon* Scudder, *Proc. Boston Soc. Nat. Hist.*, XVII, p. 467.

Type.—*Gryllus æqualis* Say.

Spharagemon cristatum Scudder.

1875. *Spharagemon cristatum* Scudder, *Proc. Boston Soc. Nat. Hist.*, XVII, p. 470. [Dallas and Waco, Texas.]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) Two adult males, one immature individual.

These specimens are considerably smaller than Scudder's measurements, but otherwise agree very well with this species.

Genus **LACTISTA** Saussure.

1884. *Lactista* Saussure, Prodr. *Ædipod.*, p. 142.

Included *L. gibbosus*, *punctatus*, *pulchripennis* and *pellepidus*, of which *punctatus* may be considered the type.

Lactista punctatus (Stål).

1873. *O[Edipoda] punctata* Stål, Recensio Orthopterorum, I, p. 130. [Mexico.]

Alta Mira, Tamaulipas. June 24, 25 and 30, 1903. (M. E. Hoag.) Three males and one female.

The female is of unusually large size, but otherwise these specimens agree very well with Presidio, Vera Cruz, individuals.

Genus **TOMONOTUS** Saussure.

1861. *Tomonotus* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 320.

Included *T. zimmermanni*, *mexicanus*, *nietanus* and *otomitus*, of which *mexicanus* is the only one uneliminated, and it consequently is the type of the genus.

Tomonotus mexicanus Saussure.

1861. *Tom[onotus] mexicanus* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 321. [Temperate Mexico.]

Guadalajara, Jalisco. July 17, August 24 and 29, September 14 and 18, 1903. (McClendon.) Twenty-six males and twenty-five females.

Zapotlanejo, Jalisco. July 31, 1903. (McClendon.) One female.

Zapotlan, Jalisco. July 7, 1902. (Townsend.) Two males.

This large series is extremely interesting and shows considerable variation in the size of the male.⁵

Tomonotus orizabæ Saussure.

1861. *Æ[dipoda] mexicana* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 397. [Mexico.]

1884. *T[omonotus] Orizabæ* Saussure, Prodrom. (Edipod., p. 98. [Texas; Mexico; Guatemala.]

Zapotlan, Jalisco. July 7, 1902. (Townsend.) Three males, two females.

Inseparable from a specimen from Uruapan, Michoacan.

Tomonotus aztecus (Saussure).

1861. *Æ[dipoda] azteca* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 397. [Mexico.]

Alta Mira, Tamaulipas. June 25, 1903. (M. E. Hoag.) Two males.

Victoria, Tamaulipas. January 14 or 15, 1903. (S. N. Rhoads.) One female.

⁵ The specimens recorded by the writer from Mazatlan as *Lactista gibbosus* (*Trans. Amer. Ent. Soc.*, XXIX, p. 10) are a species of *Tomonotus*, and in all probability *T. mexicanus*. The individuals there recorded had been dried from alcohol and many characters exhibited by them are misleading. The receipt of a specimen of true *L. gibbosus* from California (Claremont: C. F. Baker) caused me to make a second study with the above results.

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One female.

The males are inseparable from an individual of that sex from Cuernavaca, Morelos.

Genus **MESTOBREGMA** Scudder.

1876. *Mestobregma* Scudder, Bull. U. S. Geol. and Geograph. Surv. Terr., II, p. 264.

Type.—*Edipoda plattei* Thomas.

Mestobregma mexicanum (Saussure).

1884. *Ps[inidia] mexicana* Saussure, Prodr. *Edipod.*, p. 164. ["*Ager mexicanus*."]

Guadalajara, Jalisco. August 17, 1903. (McClendon.) One male.

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One male, one female.

The female individual has the metazona dull green and the anal field of the tegmina margined with rosaceous.

Genus **TRIMEROTROPIS** Stål.

1873. *Trimerotropis* Stål, Recensio Orthopt., I, p. 118, 134.

Included *T. placida* Stål (= *ochraceipennis* Blanch.) and *T. maritima* (Harris), of which the latter may be considered the type.

Trimerotropis vinculata Scudder.⁶

1876. *Trimerotropis vinculata* Scudder, Proc. Boston Soc. Nat. Hist., XVIII, p. 270. [Guadalupe Island, off Lower California; San Diego, Cal.; Mexico.]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) Two males, three females.

San Luis Potosi, State of San Luis Potosi. August 5, 1903. (M. E. Hoag.) Five males, three females.

Guadalajara, Jalisco. August 24 and 28, September 14, 18 and 22, 1903. (McClendon.) Three males, seven females.

Zapotlanejo, Jalisco. July 31, 1903. (McClendon.) Three males.

Genus **HADROTETTIX** Scudder.

1876. *Hadrotettix* Scudder, Rep. Chief Engineers, 1876, Pt. 3, p. 511.

Type.—*Gryllus fasciatus* Say.

Hadrotettix trifasciatus (Say).

1825. *Gryllus trifasciatus* Say, Amer. Ent., II, Pl. 34, page seven of text (unnumbered). ["In Arkansaw, at the distance of about three hundred miles from the Rocky Mountains."]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.)

⁶ The specimens previously recorded by me as *T. fascicula* (*Trans. Amer. Ent. Soc.*, XXVII, p. 227, and XXIX, p. 11) prove to belong to this common species of the western United States.

One male, one female, one nymph. This record extends the range of the species south of the Mexican boundary line.

Genus **HELIASTUS** Saussure.

1884. *Heliastus* Saussure, Prodr. *Ædipod.*, p. 212.

Included *H. sumichrasti*, *venezuelæ*, *aztecus* and *obesus*, of which the first may be considered the type.

Heliastus sumichrasti (Saussure).

1861. *Æ[dipoda] Sumichrasti* Saussure, Revue et Magasin de Zoologie, 2e ser., XIII, p. 324. ["Mexico calida."]

Alta Mira, Tamaulipas. June 28, 1903. (M. E. Hoag.) One female.

This individual fully agrees with two authentic specimens from Ruatan Island, Honduras, and Chilpancingo, Guerrero, received from Dr. Saussure.

Heliastus aztecus Saussure.

1884. *H[eliastus] aztecus* Saussure, Prodr. *Ædipod.*, p. 214. ["Ager mexicanus septentrionalior."]

Victoria, Tamaulipas. January 14 or 15, 1903. (S. N. Rhoads.) One female.

Genus **BRACHYSTOLA** Scudder.

1876. *Brachystola* Scudder, Bull. U. S. Geol. and Geograph. Surv. Terr., II, p. 267.

Type.—*Brachypeplus virescens* Charpentier.

Brachystola magna Girard.

1854. *Brachypeplus magnus* Girard, Explor. Red River Louisiana, p. 231, Zoology, Pl. XV, figs. 1-4. [Northern Texas.]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.) Six females, two nymphs.

Subfamily PYRGOMORPHINÆ.

Genus **SPHENARIUM** Charpentier.

1845. *Sphenarium* Charpentier, Orthopt. Descr. et Depict., tab. 31.

Type.—*S. purpurascens* Charpentier.

Sphenarium borrei Bolivar.

1884. *Sphenarium Borrei* Bolivar, Monograf. Pirgomorfinos, p. 99. [Guanajuato.]

Guadalajara, Jalisco. September 14 and 18, 1903. (McClendon.) One male, five rather immature females.

The male individual is rather strikingly colored, having the genicular regions of the posterior femora and the antennæ blackish, and the posterior and inferior margins of the pronotum purplish.

CALAMACRIS⁷ n. gen.

Allied to *Orthacris* Bolivar,⁸ but differing in the more elongate form, the more prominent fastigium, the presence of tegmina and the compressed abdomen. In general appearance it somewhat approaches *Dyscolorhinus* Saussure⁹ from Madagascar, but it is separated by a number of characters.

Form elongate, moderately compressed. Head with the fastigium strongly produced; eyes elongate-elliptical; antennæ moderately elongate, depressed. Pronotum cylindrical. Prosternum erect, conoid, blunt. Interspace between the mesosternal lobes distinctly narrower than long, enlarged anteriorly. Tegmina very short, simple. Abdomen distinctly compressed, carinate above. Cerci simple, tapering. Subgenital plate moderately produced, compressed and keeled above apically. Anterior and median limbs rather short; posterior limbs elongate, femora tapering, tibiæ with a distinct apical spine on each margin.

Calamacris olendoni n. sp.

Types: ♂ and ♀. Guadalajara, Jalisco, Mexico. August 25 (♀) and September 18 (♂), 1903. (J. F. McClendon.) Coll. Acad. Nat. Sci. Phila.

♂. Size rather small; surface lineato-granulate. Head elongate; fastigium moderately broad, produced in front of the eyes a distance equal to the length of one of them, apex rounded; eye equal to the tuberculous postocular ridge; antennæ subequal in width, apical segment lanceolate, the entire length about equal to that of the head and pronotum. Pronotum with the median and lateral carinæ represented by imperfect ridges of granules; anterior margin arcuate, posterior margin with a deep median triangular sinuosity; lateral lobes nearly twice as long as the apparent height, anterior angle obtuse, inferior margin slightly sinuate, posterior angle rectangulate, but slightly produced posteriorly. Mesonotum almost hidden under the pronotum. Metanotum simple and resembling an abdominal segment, but shorter. Tegmina not reaching the apex of the metanotum, subequal in width, about four times as long as wide, the apex rounded. Abdomen with a number of longitudinal granulose strigæ on the dorsal surface. Supraanal plate acute trigonal, slightly longer than the preceding abdominal segment. Cerci about equal to the subgenital plate in length, compressed, slightly incurved with a distinct apical crook.

⁷ *καλαμη*, stalk of corn, and *ακρις*, grasshopper.

⁸ *Monogr. Pirgomorfinos*, p. 93.

⁹ *Abhandl. Senckenb. Naturf. Gesell.*, XXI, p. 640, taf. XXXVIII fig. 38.

Subgenital plate strongly compressed apically, and bearing a very distinct keel on the apical half of the upper surface; apex when viewed laterally blunt. Anterior and median limbs short, the femora stout. Posterior femora not reaching the apex of the abdomen, slender.

♀. Size medium; form much as in the ma'e but slenderer; surface finely tuberculate. Head as in the male but proportionately shorter, the interspace between the eyes broader, and the eyes themselves not so elongate; antennæ triquetous, rather short, but slightly exceeding the head in length. Pronotum as in the male, but the traces of the lateral carinæ slight, and the posterior emargination more pronounced. Ovipositor jaws rather straight, blunt, compressed. Posterior limbs weak, in fact hardly exceeding the male limbs in size, the femora not exceeding the fifth abdominal segment in length.

General color of male above clay color, finely and rather obscurely sprinkled and washed with dull olive. Eyes walnut-brown; antennæ olivaceous at the bases, washed with sienna apically. Under surface buffy.

General color of female dull olive-greenish, probably more brilliant in life.

	Measurements.	♂	♀
Length of body,		19.5 mm.	39 mm.
Length of antennæ,		7 "	8 "
Length of pronotum,		3 "	4.5 "
Greatest width of pronotum,		2.2 "	3.8 "
Length of tegmina,		1 "	2.5 "
Length of abdomen,		11.5 "	23 "
Length of posterior femora,		8.2 "	11 "

This species is dedicated to Mr. J. F. McClendon, who secured the type while making a very interesting collection of Orthoptera in Jalisco.

A paratypic female, in addition to the type, has also been examined.

Subfamily LOCUSTINÆ.

Genus **TÆNIOPODA** Stål.

1873. *Tæniopoda* Stål, *Recensio Orthopterorum*, I, pp. 32, 51.

Included *Monachidium superbum* Stål and *T. picticornis* Stål (= *Rhomalea picticornis* Walker), of which the latter may be considered the type.

Tæniopoda burmeisteri Bolivar.

1901. *T[æniopoda] Burmeisteri* Bolivar, *Boletin Soc. Españ. Hist. Nat.*, 1901, pp. 265, 266. [Mexico.]

City of Mexico. November, 1901. (Mrs. Charles Schäffer.) One female.

Guadalajara, Jalisco. August 5 and 10, September 14, 1903. (McClendon.) Fifteen males, eleven females.

Tuxpan, Jalisco. September 4, 1903. (McClendon.) One male.

Monterey, Nuevo Leon. One male.

This species exhibits a great amount of color and considerable structural variation. The single individual from Tuxpan is almost solid black in color, but no doubt represents this species, as extreme Guadalajara specimens have the pronotum and head, aside from the yellow lines and borders which are faintly marked in the Tuxpan individual, solid black. The City of Mexico specimen is much more robust than any of the others examined, and may possibly prove to be a distinct species. This form can readily be distinguished from *picticornis* (Walker) by the orange instead of crimson antennæ. This character may be subject to variation, as most the other color characters of the species are, but nevertheless it holds true in the above series, and in eight specimens of *picticornis*. Good structural characters exist, however, to separate the two forms.

Tæniopoda tamaulipensis n. sp.

Type: ♀; Alta Mira, Tamaulipas, Mexico. July 4, 1903. (M. E. Hoag.) Coll. Acad. Nat. Sci. Phila.

Allied to *T. picticornis* (Walker), but differing in the higher and slightly more arcuate median carina of the pronotum, the greater interspace between the eyes, and the different coloration

Size large; form very robust. Head with the occiput inflated, median carina obsolete; fastigium obtuse-angulate with distinct but rather low lateral ridges; frontal costa narrow, strongly constricted and evanescent inferiorly, distinctly sulcate; eye subreniform, somewhat prominent, slightly shorter than the infraocular portion of the genæ. Pronotum cristate, the prozona exceeding the metazona in length; anterior margin obtuse-angulate, posterior margin acute-angulate; prozona with the median carina arcuate and cut, but not deeply, by three transverse sulci; metazona with the crest bent arcuate and very slightly higher than that of the prozona; metazona with distinct lateral angles but no carinæ; lateral lobes slightly longer than deep, the inferior margin slightly emarginate anteriorly; surface rugoso-punctate. Tegmina equalling the apex of the abdomen, anterior margin arcuate, apex somewhat constricted and very slightly oblique truncate. Wings large, equally as long as the tegmina when in repose; apex slightly falcate. Posterior femora almost equal to the abdomen in length, rather slender.

General color burnt-sienna, the median carina and posterior margin

of the pronotum as well as a median line on the head ferruginous, median stripe of the pronotum bordered by clear black longitudinal lines. Tegmina blackish, the veins olive-green. Wings with the disk pale geranium-red, the apex and almost the entire margins blackish. Abdomen above blackish with an interrupted median line of orange-ochraceous. Beneath tawny-ochraceous, the lower part of the face cream color, the abdomen with a longitudinal lateral line of black. Limbs maculate and punctate with blackish as is usual in the genus, the ground color of the anterior and median pair being gray-brown, the posterior ochraceous.

Measurements.

Length of body,	61.5 mm.
Length of pronotum,	19.5 "
Greatest width of pronotum,	11 "
Length of tegmina,	42 "
Length of wing,	37 "
Length of posterior femora,	27.5 "

The type is the only specimen of this species seen.

Tæniopoda auricornis (Walker).

1870. *Rhomalea auricornis* Walker, Catal. Spec. Derm. Salt. Brit. Mus., III, p. 538. [Oaxaca; Vera Cruz.]

Alta Mira, Tamaulipas. July 4, 1903. (M. E. Hoag.) One male, one female.

After comparison with Walker's description, I have concluded that these specimens represent his species. They are closely related to *T. centurio* (Drury), but can be separated by the larger size, shorter wings, which also have the apical third narrowed, the more produced posterior margin of the pronotum, the greater space between the eyes, and the slenderer posterior limbs.

Genus **CHROMACRIS** Walker.

1870 *Chromacris* Walker, Catal. Spec. Derm. Salt. Brit. Mus., V, p. 643.

Included *C. speciosa* and *colorata*, of which the former (= *miles*) was represented by specimens and can be considered the type.

Chromacris colorata (Serville).

1839. *Acridium coloratum* Serville, Orthoptères, p. 674. [South Carolina(?).]

Alta Mira, Tamaulipas. June 25, 26 and 28, 1903. (M. E. Hoag.) Three males, eight females.

Genus **LEPTYSTMA** Stål.

1873. *Leptystma* Stål, Recensio Orthopterorum, I, pp. 42, 85.

Included *Opsomala filiformis* Serville, *Truxalis obscurus* Thunberg and *Opsomala marginicollis* Serville, of which the latter may be considered the type.

Leptystma marginicollis (Serville).

1839. *Opsomala marginicollis* Serville, Orthoptères, p. 591. [North America.]

Ojos del Diablo, Chihuahua. May 2, 1902. (C. H. T. Townsend.) One female.

Zapotlanejo, Jalisco. July 31, 1903. (McClendon.) One female.

Guadalajara, Jalisco. August 9 and 25, 1903. (McClendon.) One male, one female.

Genus **PROCTOLABUS** Saussure.

1859. *Proctolabus* Saussure, Revue et Magasin de Zoologie, 2e sér., XI, p. 393.

Type.—*Ommatolampis mexicana* Saussure.

Proctolabus mexicanus (Saussure)?.

1859. *O[mmatolampis] mexicana* Saussure, Revue et Magasin de Zoologie, 2e sér., XI, p. 393. [Toluca, Mexico.]

Guadalajara, Jalisco. September 14 and 18, 1903. (McClendon.) One male, two females.

This specimen belongs to this genus and probably to this species, but several characters are at variance with those given in the brief original description. The lower portion of the lateral lobes of the pronotum as well as the meso- and metapleura of the male are milky-white, while the lower as well as the upper face of the posterior femora of the same sex bear a line of the same color. Anterior and median limbs and external face of the posterior femora of the male are solid French green. The females are almost uniform olivaceous.

Genus **SCHISTOCERCA** Stål.

1873. *Schistocerca* Stål, Recensio Orthopterorum, I, p. 64.

Included *Acridium peregrinum*, *melanocercum*, *americanum*, *pallens*, *bivittatum*, *flavo-fasciatum*, and *columbinum*, of which *americanum* may be considered the type.

Schistocerca vaga (Scudder).

1876. *Acridium vagum* Scudder, Proc. Boston Soc. Nat. Hist., XVIII, p. 269. [Guadalupe, Island off Lower California; San Diego, California; California.]

Guadalajara, Jalisco. July 17 and September 14 and 18, 1903. (McClendon.) Two males, three females.

Zapotlan, Jalisco. July 8, 1902. (C. H. T. Townsend.) One female.

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One male, two females.

Schistocerca pyramidata Scudder.

1899. *Schistocerca pyramidata* Scudder, Proc. Amer. Acad. Arts and Sciences, XXXIV, pp. 443, 455. [Cuernavaca, Mexico.]

Zapotlan, Jalisco. July 18, 1902. (C. H. T. Townsend.) One male.

Guadalajara, Jalisco. August 26, 1903. (McClendon.) One male.

Schistocerca obscura (Fabricius).

1798. [*Gryllus*] *obscurus* Fabricius, Ent. Syst. Suppl., p. 194. [North America.]

Guadalajara, Jalisco. September 14, 1903. (McClendon.) Two males.

Schistocerca lineata Scudder.

1899. *Schistocerca lineata* Scudder, Proc. Amer. Acad. Arts and Sciences, XXXIV, pp. 445, 465. [Barber county, Kansas; Texas; San Antonio, Texas; Gulf Coast of Texas; Montelovez, Coahuila, Mexico.]

Guadalajara, Jalisco. September 14 and 18, 1903. (McClendon.) Three females.

Schistocerca americana (Drury).

1770. *Libellula* *Americanus* Drury, Illust. Nat. Hist., I, pp. 128 and two of index, Pl. LXIX, fig. 2. [Virginia; Antigua; New York; Madras in the East Indies; Sierra Leon in Africa.]

Guadalajara, Jalisco. August 15 and 24, 1903. (McClendon.) One male, two females.

Genus **PHÆDROTETTIX** Scudder.

1897. *Phædrotettix* Scudder, Proc. U. S. Nat. Mus., XX, p. 22.

Type.—*P. augustipennis* Scudder.

Phædrotettix augustipennis Scudder.

1897. *Phædrotettix augustipennis* Scudder, Proc. U. S. Nat. Mus., XX, p. 22, Pl. II, fig. 7. [Mount Alvarez, San Luis Potosi, Mexico; Comacho, Durango, Mexico; Corpus Christi Bay, Nueces county, Texas.]

Victoria, Tamaulipas. January 14 or 15, 1903. (S. N. Rhoads.) Two males, two females.

One of the male specimens was kindly compared by Mr. A. N. Caudell with typical specimens from San Luis Potosi, and he states that they are probably identical, though some slight differences do exist. The drawing of the genitalia given by Scudder is misleading, as one receives the impression that the subgenital plate is longer in the Victoria males, while Mr. Caudell, after comparison with a co-type, states that the reverse is true.

Genus **SINALOA** Scudder.

1897. *Sinaloa* Scudder, Proc. U. S. Nat. Mus., XX, p. 40.

Type.—*S. behrensi* Scudder.

***Sinaloa brevispinis* n. sp.**

Types: ♂ and ♀; Victoria, Tamaulipas, Mexico. January 14 or 15, 1903. (S. N. Rhoads.) Acad. Nat. Sci. Phila.

Allied to *S. behrensi* from Sinaloa, but differing in the shorter but distinctly spiniform furcula, the subtruncate tips of the tegmina, and in the different coloration.

♂.—Size rather small. Head with the occiput flattened; interspace between the eyes but little more than half the width of the frontal costa; fastigium strongly declivent, rather shallowly excavated; frontal costa subequal, except above where it is slightly narrowed, moderately sulcate at and below the ocellus; eye ovate, moderately prominent. Pronotum strongly rugoso-punctate, with the median carina present as a rather coarse ridge, subobsolete between the sulci, the traces of the lateral carinae of the faintest character; transverse sulci distinct; prozona almost twice as long as the metazona; anterior margin arcuate, posterior margin with a broad shallow median emargination; lateral lobes slightly longer than high, the posterior and inferior margins sinuous. Prosternal spine erect, retrorse, rather blunt; interspace between the mesosternal lobes longitudinal, almost twice as long as wide; metasternal lobes subattinent. Tegmina reaching to the apex of the metanotum elongate-ovoid, apex rotundato-truncate, longitudinal veins distinct. Abdomen faintly carinate above, the apex somewhat upturned; furcula spiniform, compressed, attinent, as long as the last dorsal segment; supraanal plate semi-ovate, apex obtuse-angulate, median ridge dividing centrally and sending forward two parallel branches, lateral sections of the plate rather deeply excavated; cerci simple, about two and a half times as long as the basal width, moderately tapering, the apical fourth with a slight emargination of the posterior margin; subgenital plate moderately produced, the apex moderately acute but not elevated. Anterior and median limbs with the femora considerably inflated; posterior femora robust, genicular region rather large; tibiae with nine spines on the external margin.

♀.—Size medium. Head with the interspace between the eyes but little narrower than the frontal costa; frontal costa evenly but distinctly constricted inferiorly as well as above the ocellus; eye elongate-subovate, distinctly longer than the infraocular portion of the genae; antennae slightly shorter than the head and pronotum, blunt. Pro-

notum as in the male but broader, more inflated and subtectate. Prosternal spine very short, thick and blunt; interspace between the mesosternal lobes slightly longitudinal; metasternal lobes subattinent. Posterior femora with ten or eleven spines on the external margin. Ovipositor valves exerted.

General color olive-green above, beneath dull yellowish. Head with a line along the superior border of the eye and a postocular streak greenish-yellow; eyes umber in the male, chestnut in the female; antennae brownish with the basal portion dull yellow. Pronotum with the postocular streak continued along the lateral margins of the disk, rather broken in the female; lateral lobes in the male bearing on the inferior half a broken bar of dull yellow. Tegmina dull vinaceous. Abdomen with the median portion of the dorsal surface bearing a series of triangular patches of dull brownish. Limbs (except the posterior tibiae) oil-green, more or less infuscate; genicular region of the posterior femora outlined with blackish; posterior tibiae basally verditer-blue, apical portion and tarsi scarlet-vermilion.

	<i>Measurements.</i>	
	♂	♀
Length of body,	17.5 mm.	26.5 mm.
Length of pronotum,	4.3 "	6 "
Greatest width of pronotum,	3.9 "	6 "
Length of tegmina,	2.8 "	4.2 "
Greatest width of tegmina,	1.5 "	2 "
Length of posterior femora,	10.5 "	13.5 "

Three specimens (one male, two females) from the type locality have been examined in addition to the types. Considerable variation exists in the intensity of the coloration, the two paratypic females being uniform wood-brown with the femora conspicuously fasciate internally with blackish.

Genus **AIDEMONA** Seudder.¹⁰

1897. *Aidemona* Seudder, Proc. Amer. Acad. Arts and Sciences, XXXII, pp. 198, 204.

Type.—*A. azteca* (Saussure).

Aidemona azteca (Saussure).

1861. *P[atyphyma] aztecum* Saussure, Revue et Magasin de Zoologie, 2e sér., XIII, p. 161. [Temperate Mexico.]

Guadalajara, Jalisco. July 17, August 23 and 29, 1903. (McClendon.) One male, two females.

Zapotlanejo, Jalisco. July 31, 1903. (McClendon.) Two males.

¹⁰ This name is not available from Brunner, *Ann. Mus. Civ. Stor. Nat. Genova*, XXXIII, p. 145.

Zapotlan, Jalisco. July 7, 1902. (C. H. T. Townsend.) Two males.

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One female.

Genus **HESPEROTETTIX** Scudder.

1875. *Hesperotettix* Scudder, Bull. U. S. Geol. and Geogr. Surv. Terr., II, No. 3, p. 262.

Type.—*Hesperotettix viridis* Scudder (not of Thomas) = *Hesperotettix festivus* Scudder.

Hesperotettix meridionalis Scudder.

1897. *Hesperotettix meridionalis* Scudder, Proc. U. S. Nat. Mus., XX, p. 59. [Guanajuato; Sierra Nola, Tamaulipas.]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One female.

This specimen, while fully agreeing in measurements, structural characters and major color characters, differs from Scudder's description in the more uniform greenish-yellow color of the head, and in the presence of dull red pregenicular annuli on the anterior and median as well as the posterior femora.

Genus **MELANOPLUS** Stål.

1873. *Melanoplus* Stål, Recensio Orthopterorum, I, p. 79.

Type, as designated by Scudder, *M. femur-rubrum* (De Geer).

Melanoplus marculentus Scudder.

1897. [*Melanoplus*] *marculentus* Scudder, Proc. Amer. Philos. Soc., XXXVI, p. 6. [Montelovez, Coahuila; Sierra Nola, Tamaulipas; Sierra de San Miguelito, and mountains twelve leagues east of San Luis Potosi; San Luis Potosi; Bledos, San Luis Potosi; Zacatecas; Aguas Caliente, Mexico.¹¹]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) Two males.

One of the above specimens is considerably larger than Scudder's measurements, and also has the tegmina much longer than either the typical measurements or the other specimen examined.

Melanoplus spretis (Thomas).

"1865. *Acridium spretis* Thomas, Trans. Ill. St. Agric. Soc., V, p. 450."

Guadalajara, Jalisco. August 17 and 24, September 14 and 18, 1903. (McClendon.) Five males, two females.

Melanoplus atlanis (Riley).

1875. *Caloptenus atlanis* Riley, Seventh Ann. Rep. Missouri State Ent., p. 169. [New Hampshire.]

Guadalajara, Jalisco. August 27, 1903. (McClendon.) One male.

¹¹ As Scudder gives no localities in his preliminary paper, the above information is taken from his later paper (*Proc. U. S. Nat. Mus.*, XX, p. 141).

Melanoplus reflexus Scudder.

1897. [*Melanoplus*] *reflexus* Scudder, Proc. Amer. Philos. Soc., XXXVI, p. 9. [Cuidad del Maiz, San Luis Potosi.¹²]

La Joya, San Luis Potosi. August 10, 1903. (M. E. Hoag.) One female.

This specimen fully agrees with Scudder's description of the single female individual seen by him.

Melanoplus palmeri Scudder.

1897. [*Melanoplus*] *palmeri* Scudder, Proc. Amer. Philos. Soc., XXXVI, p. 23. [Fort Wingate, Bernalillo county, New Mexico; Fort Whipple, Yavapai county, Arizona.¹³]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.) One male.

This specimen extends the range of the species considerably to the south.

Melanoplus corpulentus Scudder.

1897. [*Melanoplus*] *corpulentus* Scudder, Proc. Amer. Philos. Soc., XXXVI, p. 27. [Tlalpan, Mexico; hills about San Luis Potosi, Mexico; mountains twelve leagues east of San Luis Potosi, Mexico; Sierra de San Miguelito, San Luis Potosi, Mexico; Zacatecas, Mexico; Sonora, Mexico; Silver City, Grant county, New Mexico.¹⁴]

Guadalajara, Jalisco. September 14, 1903. (McClendon.) One male.

This specimen, when compared with individuals of this species from the Federal District of Mexico, is seen to be larger and with slightly longer (comparatively) tegmina and wings.

Melanoplus differentialis Thomas.

1871. *Caloptenus differentialis* Thomas, Proc. Acad. Nat. Sci. Phila., 1871, p. 149. [Jackson county, Illinois.]

Guadalajara, Jalisco. September 14, 19 and 22, 1903. (McClendon.) Eight males, one female.

Genus **PÆCILOTETTIX** Scudder.

1897. *Pæcilotettix* Scudder, Proc. Amer. Acad. Arts and Sciences, XXXII, pp. 203, 206.

Type.—*Caloptenus* (*Hesperotettix*) *picticornis* Thomas (= *Acridium pantherinum* Walker).

Pæcilotettix pantherinus (Walker).

1870. *Acridium pantherinum* Walker, Catal. Derm. Salt. Brit. Mus., IV, p. 623. [Mexico.]

Guadalajara, Jalisco. September 1, 1903. (McClendon.) One male.

¹² Locality from Proc. U. S. Nat. Mus., XX, p. 222.

¹³ Localities from Proc. U. S. Nat. Mus., XX, p. 231.

¹⁴ Localities from Proc. U. S. Nat. Mus., XX, p. 314.

Genus **OSMILIA** Stål.

1873. *Osmilia* Stål, Recensio Orthopterorum, I, p. 68.

Included *Acrydium flavo-lineatum* De Geer, *Gryllus violaceus* Thunberg, *Gryllus rufipes* Thunberg, *Gryllus obliquus* Thunberg and *Acridium maculosum* Stål, of which *flavo-lineatum* may be considered the type.

Osmilia toltecum (Saussure).

1861. *A[cridium] toltecum* Saussure, Revue et Magasin de Zoologie, 2e sér., XIII, p. 163. [Temperate Mexico.]

Guadalajara, Jalisco. August 24, September 18, 1903. (McClen-
don.) Two females.

Alta Mira, Tamaulipas. June 28, 1903. (M. E. Hoag.) One
female.

Genus **DACTYLOTUM** Charpentier.

1845. *Dactylotum* Charpentier, Orthopt. Descr. et Depicta, tab. 52.

Type.—*D. bicolor* Charpentier.

Dactylotum variegatum (Scudder).

1879. *Pezotettix variegatum* Scudder, Proc. Bost. Soc. Nat. Hist., XX,
p. 75. [San Diego, California; Sonora; Fort Whipple and Buchanan,
and forty miles east of Tucson, Arizona.]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.)
One female, two immature males.

Dactylotum histricum n. sp.

Type: ♀; La Joya, San Luis Potosi, Mexico. August 10, 1903.
(M. E. Hoag.)

Allied to *D. variegatum* (Scudder), but differing in the slightly narrower and more acuminate tegmina, the slenderer posterior femora, the shorter metazona of the pronotum and the rather distinctive coloration.

Size rather large; form as usual in the genus. Head with the occiput hardly elevated above the pronotum, rounded; interspace between the eyes twice as wide as the inferior width of the frontal costa; fastigium broad, very shallowly and broadly excavated; frontal costa slightly constricted above, but broader than below the ocellus, greatest width immediately above the ocellus, moderately sulcate throughout; eyes elongate-ovate, truncate anteriorly, very slightly longer than the infraocular portion of the genæ; antennæ equal to the head and pronotum in length, the extreme apex blunt and slightly depressed. Pronotum slightly arched transversely and with a very noticeable transverse convexity, as usual in the genus; transverse sulci strongly impressed; median carina absent on the prozona, finely marked on the metazona, the latter only two-thirds the length of the prozona and

strongly punctate; anterior margin subtruncate with a very slight median emargination, posterior margin arcuate, the apex subtruncate; lateral lobes longer than deep, the lower margin distinctly obtuse-angulate. Prosternal spine rather short, blunt, slightly retrorse; interval between the mesosternal lobes broader than long; interval between the metasternal lobes quadrate. Tegmina equal to the pronotum in length, slightly less than two-thirds as wide as long, subattinent; apical portion subacute, the apex itself rounded. Posterior femora moderately slender, slightly more than four times as long as wide; posterior tibiæ with seven or eight spines on the external margin.

General color bluish-black, variegated with orange-vermilion, orange, lemon-yellow and apple-green. Head ornamented with orange vermilion on the posterior inferior portion of the genæ, an infraocular blotch, a line along the clypeal margin of the face, and a crude semi-circle margining the posterior superior borders of the eyes and the interocular space. Pronotum with the usual median crescent and the short anterior median bar orange-vermilion, fading along the posterior median bar into orange, which color decorates the posterior margin of the pronotum, very broadly on the lateral lobes, narrowly on the disk. Tegmina reticulate with apple-green. Abdomen with the dorsal segments posterior margined with lemon-yellow, developed on the median line into a series of triangular blotches which are connected by a narrow line of the same color, an obscure lateral series of lemon-yellow dots are also noticeable; ventral segments dull lemon-yellow with the bluish-black reduced to a series of lateral basal spots, and a broad triangular basal spot on the subgenital plate. Prosternal spine lemon-yellow; mesosternum and metasternum dirty luteous. Anterior and median femora with a median or premedian blotch of orange-vermilion. Posterior femora with three broken bars of lemon-yellow, one basal, one premedian, the other median; external face with the scalariform impressions outlined with yellow, posterior tibiæ blackish-blue, the spines black apically.

Measurements.

Length of body,	31.5 mm.
Length of pronotum,	7.5 "
Greatest width of pronotum,	5.7 "
Length of tegmina,	7.5 "
Greatest width of tegmina,	4.5 "
Length of posterior femora,	15.2 "

Two female specimens examined.

Genus **PERIXERUS** Gerstaecker.

1873. *Perixerus* Gerstaecker, Entom. Zeit. Stettin, XXXIV, p. 192.

Type.—*P. squamipennis* Gerstaecker.

***Perixerus variabilis* n. sp.**

Type: ♀; Guadalajara, Jalisco, Mexico. September 18, 1903. (J. F. McClendon.) Coll. Acad. Nat. Sci. Phila.

Allied to *P. laevis* Rehn,¹⁵ but differing in the narrower interspace between the mesosternal lobes and the very different blue-gray and yellow coloration.

Size medium; form moderately slender; surface sparsely clothed with long hairs. Head with the occiput moderately inflated, obscurely punctate; interspace between the eyes rather broad, slightly wider than the frontal costa; fastigium depressed, broad, blunt, with a broad and shallow excavation; frontal costa subequal, not reaching the clypeus, rather shallowly sulcate at and below the ocellus; eye subreniform, longer than the subocular portion of the genæ; antennæ slightly shorter than the head and pronotum. Pronotum with the transverse sulci moderately distinct; prozona about half again as long as the metazona; anterior and posterior margins subtruncate; lateral lobes slightly longer than high, the lower margin sinuate anteriorly; surface rugoso-punctate, the metazona with the punctures finer. Prosternal spine short, thick and blunt. Interval between the mesosternal lobes quadrate; interval between the metasternal lobes distinctly longitudinal. Tegmina elongate-ovate, reaching to the apical margin of the first abdominal segment, internal margins distant; apex bluntly rounded; surface coriaceous-reticulate. Anterior and median limbs moderately slender; posterior limbs rather slender, the imbrications of the femora pronounced; tibiae with seven or eight (on one side) spines on the external margin.

General colors oil-green and lemon-yellow varied with verditer-blue. Head bluish above, with a dull median triangular yellowish spot, and a yellowish post-ocular streak which is bordered above and below with blackish; lower part of face dull bluish and green, the genæ greenish, with the margins clear yellow and an obscure inferior bluish patch; eyes chestnut; antennæ bluish-black narrowly annulate with dull bluish-green. Pronotum above blue with a distinct median line of yellow, the posterior and inferior margins also narrowly edged with dull yellow; lateral lobes of the pronotum yellowish-green; the transverse sulci black except at the yellow median line. Tegmina glaucous

¹⁵ *Trans. Amer. Ent. Soc.*, XXVII, p. 98.

green. Abdomen above bluish, except for a median longitudinal line which, with the inferior surface, is dull yellowish. Limbs dull yellowish-green sprinkled with blackish; posterior femora with the imbrications distinctly outlined with black, genicular region with a crescent of black; tibiae glaucous, the spines with their apical half black.

Measurements.

Length of body,	22.5 mm.
Length of pronotum,	5.5 "
Greatest width of pronotum,	5 "
Length of tegmina,	4.8 "
Greatest width of tegmina,	3 "
Length of posterior femora,	14.2 "

The type is the only specimen examined.

Family **TETTIGONIDÆ**.

Genus **HORMILIA** Stål.

1873. *Hormilia* Stål, Ofversigt af K. Vetensk.-Acad. Förhandlingar, XXX, No. 4, p. 41.

Type.—*Phaneroptera tolteca* Saussure.

Hormilia prasina Saussure and Pictet.

1897. *Hormilia prasina* Saussure and Pictet, Biol. Cent.-Amer., Orth., I, p. 319, tab. XV, fig.14. [Mazatlan, Sinaloa; Guerrero.]

Guadalajara, Jalisco. August 24, 1903. (McClendon.) One male.

This individual fully agrees with the original description, except that the posterior margin of the pronotum is centrally emarginate.

Genus **ARETHÆA** Stål.

1876. *Arethæa* Stål, Bihang till K. Svenska Vet. Akad. Handlingar, Bd. 4, No. 5, p. 55.

Type.—*Ephippitytha gracilipes* Thomas.

Arethæa gracilipes (Thomas).

1870. *E[phippitytha] gracilipes* Thomas, Proc. Acad. Nat. Sci. Phila., 1870, p. 76. [Southern Colorado.]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.) Two adult males, two immature females.

These specimens are badly shriveled and faded, having been collected in spirits, but they apparently belong to this species.

Arethæa carita Scudder.

1902. *Arethæa carita* Scudder, Proc. Davenport Acad. Sciences, IX, p. 52, Pl. 4, fig. 5. [Mesilla Park, New Mexico.]

Casas Grandes, Chihuahua. September, 1902. (Dr. W. E. Hughes.) One female.

This specimen fully agrees with Scudder's description and figure.

Genus **SCUDDERIA** Stål.

1873. *Scudderia* Stål, Ofversigt af K. Vetensk.-Akad. Förhandlingar, XXX, No. 4, p. 41.

Type.—*Phaneroptera curvicauda* De Geer.

Scudderia mexicana (Saussure).

1861. *Phaneroptera mexicana* Saussure, Revue et Magasin de Zoologie, 2e sér., XIII, p. 129. [Mexico.]

Guadalajara, Jalisco. August 24 and September 4, 1903. (McClendon.) One male, one female.

Scudderia unguolata Scudder.

1898. *Scudderia unguolata* Scudder, Proc. Amer. Acad. Arts and Sciences, XXXIII, p. 280, fig. 6. [Tepic, Mexico.]

Guadalajara, Jalisco. September 14 and 18, 1903. (McClendon.) Three males, one female.

Genus **STILPNOCHLORA** Stål.

1873. *Stilpnoclora* Stål, Ofversigt af K. Vetensk.-Akad. Förhandlingar, XXX, No. 4, p. 40.

Type.—*Phylloptera marginella* Serville.

Stilpnoclora azteca (Saussure).

1859. *Ph[ylloptera] azteca* Saussure, Revue et Magasin de Zoologie, 2e sér., XI, p. 203. [Mexico (Cordova, etc.).]

Guadalajara, Jalisco. July 17 and August 2, 1903. (McClendon.) Three females.

Genus **CONOCEPHALUS** Thunberg.

1815. *Conocephalus* Thunberg, Mem. Acad. Imp. Sci. St. Petersb., V, pp 218, 271.

Included *C. subulatus*, *triops*, *lanceolatus*, *hemipterus*, *acuminatus*, *nasutus*, *albifrons*, *falx*, *cinereus*, *varius*, *virens*, *discolor*, *griseus*, *bilineatus*, *inflatus*, *armatus*, *cornutus*, *spinigerus*, *trifidus*, *tricornis*, *triceps*, *viridissimus*, *rugosus* and *elongatus*.

Conocephalus obscurellus Redtenbacher.

1891. *Conocephalus obscurellus* Redtenbacher, Verh. Zool. Bot. Gesell. Wien, XLI, p. 397. [Cuernavaca, Mexico; Guatemala; Guita; Antilles; Venezuela; Nicaragua; Cuba.]

Guadalajara, Jalisco. (McClendon.) One female.

Genus **STIPATOR** Rehn.

1859. *Orchesticus* Saussure, Revue et Magasin de Zoologie, 2e sér., XI, p. 201. (Not of Cabanis, 1851.)

1900. *Stipator* Rehn, Trans. Amer. Ent. Soc., XXVII, p. 90.

Type.—*O. americanus* Saussure.

Stipator grandis n. sp.

Type: ♀; Alta Mira, Tamaulipas, Mexico. June 27, 1903. (M. E. Hoag.) Acad. Nat. Sci. Phila.

This new species is quite distinct from any of the previously known species in the genus, and can readily be distinguished by its large size, very long and powerful posterior limbs and comparatively short ovipositor.

Size very large; form elongate-fusiform. Head with the fastigium about as wide as the length of the eye, bluntly rounded, touching the facial process; eye ovate, comparatively small and not prominent; antennæ slightly exceeding the body and ovipositor in length, basal joint flattened inferiorly. Pronotum slightly expanding posteriorly, decidedly prolonged; slightly flattened on the disk, but lateral angles rounded; anterior margin truncate, posterior margin broadly rounded, no carina present; lateral lobes longer than high, the posterior margin slightly emarginate, the inferior margin oblique, the angles obtuse. Prosternum with two suberect slender spines; mesosternum and metasternum acutely lobate. Tegmina or wings not apparent. Abdomen moderately compressed, each segment with a slight thickening of the posterior margin on the median line, on the distal segments supplemented by additional like structures, which are arranged in longitudinal series. Ovipositor slightly curved, short, but slightly longer than the pronotum and not more than half the length of the posterior femora, subequal in width; the apex very acute, with superior margin straight for a short distance; subgenital plate subtruncate apically. Anterior coxæ strongly spined; femora about equal to the pronotum in length, two or three spines on the anterior margin, unarmed on the posterior margin; tibiæ slightly longer than the femora, bearing three spines on the posterior superior margin. Median coxæ unarmed; femora slightly longer than the anterior femora, margins unarmed except for the short paired spines on the genicular lobes; tibiæ slightly longer than the femora, anterior superior margin with two spines, posterior superior margin with four spines, one of which is apical. Posterior femora equal to the body in length, strongly inflated basally, slender apically, internal inferior margin spined except apically; tibiæ about equal to the femora, subquadrate, the superior margins closely and evenly spined.

General color prout's brown, marked on the dorsum with vandyke brown and on the lower portion of the lateral lobes and the pleura with wood-brown. Head with the facial portion and the genæ suffused with bistre, a faint postocular streak present; antennæ narrowly annu-

late with ecru-drab. Pronotum with the upper half of the lateral lobes bistre; posterior margin of the lateral lobes narrowly blackish. Mesonotum and metanotum with lateral blackish patches, more distinct on the mesonotum.

Measurements.

Length of body,	37	mm.
Length of pronotum,	12.5	"
Greatest width of disk of pronotum,	7.5	"
Length of posterior femora,	37	"
Length of ovipositor,	18	"

A paratypic female has also been examined.

Genus **CEUTHOPHILUS** Scudder.

1862. *Ceuthophilus* Scudder, Boston Jour. Nat. Hist., VII, p. 433.

Included *C. maculatus* (Harr.), *C. brevipes* Scudd., *C. lapidicola* (Burm.), *C. uhleri* Scudd., *S. scabripes* (Hald.), *C. divergens*, *C. latens*, *C. niger* and *C. californianus* Scudd., *C. stygius* (Scudd.), *C. agassizii* (Scudd.) and *C. gracilipes* (Hald.). The first of these, *maculatus*, may be considered the type.

Ceuthophilus macropus n. sp.

Type: ♀; Guadalajara, Jalisco, Mexico. September 14, 1903. (McClendon.) Acad. Nat. Sci. Phila.

This new species is provisionally placed in *Ceuthophilus*, but it is possibly distinct, as the median coxæ are not spined. It does not appear to be closely related to any of the previously known species, though running to *occultus* and *discolor* in Scudder's key of the genus, to which, however, it is not closely related.

Size medium; form compressed, elongate-fusiform. Head short and broad; occiput sloping downward and forward; eye rather small, sub-trigonal; antennæ about twice as long as the body. Pronotum arched transversely; anterior and posterior margins truncate; lateral lobes slightly longer than high, inferior margin very broadly and slightly arcuate, angles rounded. Mesonotum and metanotum subequal in lateral depth, extending below the inferior margin of the lateral lobes of the pronotum. Abdomen compressed, surface smooth. Ovipositor slightly longer than the pronotum, straight, tapering evenly from the base to one-third the length from the apex, subequal in the apical third; apex obliquely truncate, the superior margin with a prominent rounded emargination which gives the extreme apex an almost needle-like character; internal valves bearing five prominent spines on their inferior margins. Anterior coxæ unarmed; femora about one-fifth

longer than the pronotum, somewhat compressed, anterior inferior margin with two distal spines, one large and one small, no genicular spine present; tibiae about equal to the femora, unarmed above. Median coxae unarmed; femora about equal to the anterior femora in length, slenderer, anterior inferior margin armed distally with three or four spines, increasing in size toward the apex, posterior inferior margin with several very small spines on the distal half, genicular spine distinct; tibiae slightly longer than the femora, armed on the anterior superior margin with two large and two small spines, posterior margin armed with two or three spines. Posterior femora almost equal to the body in length, moderately inflated, the length about three and a half times the breadth, external inferior margin unarmed, internal inferior margin supplied with a series of small depressed spines, no genicular spine present; tibiae straight, exceeding the femora by about one-eighth the length of the latter, armed on the upper surface with four pair of spurs, the smaller spines very uniform and rather stout, median apical spurs equal to the metatarsus in length; second joint of the tarsi about half the length of the metatarsus, third joint of the tarsi slightly more than half the length of the second.

General color cinnamon, suffused on the upper surface of the abdomen, thorax and head and the entire anterior limbs except the tarsi with liver brown; antennae cinnamon; posterior femora with the inferior margins and two longitudinal bars on the external face blackish-brown.

Measurements.

Length of body,	13.8 mm.
Length of pronotum,	5.2 "
Greatest width of pronotum,	4 "
Length of posterior femora,	14.2 "
Length of ovipositor,	6 "

The type is the only specimen examined.

Family **GRYLLIDÆ**.

Genus **GRYLLUS** Linnæus.

1758. *Gryllus* Linnæus, Syst. Nat., Xth edit., p. 425.

Type.—*Gryllus domesticus* Linnæus.¹⁶

Gryllus assimilis Fabricius.

1775. [*Gryllus*] *assimilis* Fabricius, Syst. Ent., p. 280. [Jamaica.]

Guadalajara, Jalisco. August 21, September 14 and 18, 1903. (McClendon.) Eleven males, six females.

¹⁶ Vide Rehn, *Canad. Entom.*, XXXIII, pp. 118-121.

These specimens, though slightly smaller, agree very well with individuals from Jalapa and Teocelo, Vera Cruz.

Gryllus barretti Rehn.

1901. *Gryllus barretti* Rehn, Trans. Amer. Entom. Soc., XXVII, p. 221. [Cuernavaca, Morelos.]

Tuxpan, Jalisco. September 4, 1903. (McClendon.) One female.

This individual fully agrees with the type of *barretti*, and is interesting as it demonstrates the fact that the species is brachypterous as well as macropterous, the typical series being in the latter condition.

Gryllus mexicanus Saussure.

1859. *Gryllus mexicanus* Saussure, Revue et Magasin de Zoologie, 2e sér., XI, p. 316. [Mexico.]

Guadalajara, Jalisco. September 18, 1903. (McClendon.) One female.

Zapotlanejo, Jalisco. July 31, 1903. (McClendon.) One male.

Genus **ÆCANTHUS** Serville.

1831. *Æcanthus* Serville, Ann. Sci. Nat., XXII, p. 134.

Included *Æ. italicus* (= *pellucens* Scopoli), *Æ. bipunctatus* and *Æ. niveus*. Of these, the first may be selected as the type.

Æcanthus niveus (De Geer).

1773. *Gryllus niveus* De Geer, Mém. l'Hist. Ins., III, p. 522. [Pennsylvania.]

Guadalajara, Jalisco. September 18, 1903. (McClendon.) Three males.

Æcanthus varicornis Walker.

1869. *Æcanthus varicornis* Walker, Catal. Derm. Salt. Suppl. Blatt. Coll. Brit. Mus., p. 94. [Mexico.]

Guadalajara, Jalisco. September 14, 1903. (McClendon.) One female.

This specimen does not fully agree with Saussure's figures and description in the *Biologia Centrali-America*,¹⁷ as the pronotum is not so elongate, though this may be due to sex, as Saussure figured a male and the individual in hand is the other sex. Walker's description is so general that little can be made of it, but the Guadalajara specimen fully agrees with it as well as the structure of the opposite sex and the insufficiency of the diagnosis will allow. This species has been recorded from as far north as Tepic.

¹⁷ *Biol. Cent.-Amer.*, I, p. 254, tab. XII, figs. 24 and 25.

Genus **THAMNOSCIRTUS** Saussure.

1878. *Thamnoscirtus* Saussure, *Mélanges Orthoptérologiques*, VI, p. 630, fig. XLVI, No. 1.

Included *Phylloscirtus cicindeloides* and *vittatus* Gerstaecker, of which the former may be considered the type.

Thamnoscirtus caeruleus n. sp.

Types: ♂ and ♀; Guadalajara, Jalisco, Mexico. September 16 (♂) and 18 (♀), 1903. (McClendon.) Acad. Nat. Sci. Phila.

Allied to *T. cicindeloides*, but differing in the very distinctive coloration, the larger eyes, the more compressed pronotum and a number of minor characters. No close relationship exists with *vittatus* Gerstaecker and *montanus* Saussure, while *viridicator* Saussure can be readily separated by the coloration.

♂.—Size medium; appearance cicindeliform as is usual in the genus. Head trigonal, depressed, interocular region flat; eye subelliptical, prominent, in greatest length almost equal to the interocular width. Pronotum deplanate, somewhat constricted mesially, anterior margin truncate with a slight median emargination, posterior margin truncate; central portion of disk with a distinct longitudinal impressed line which fails to reach either the anterior or posterior margin; lateral lobes of the pronotum with the inferior margin broadly arcuate. Tegmina slightly shorter than the abdomen; axillary veins straighter and less curved than in *cicindeloides*. Anterior tibiae with the tympanum on the anterior face small and elongate-elliptical. Posterior femora moderately inflated, slightly shorter than the tegmina. (The male individual has been somewhat crushed and many structural features have been damaged or changed to such an extent as to preclude any mention of them.)

♀.—Size medium; form as in the male, but slenderer. Head as in the male. Pronotum as in the male except that the posterior portion is not slightly broader than the anterior as in the male, and the median impressed line is less distinct. Tegmina arched, slightly exceeding the apex of the abdomen, subcoriaceous, apex acute; lateral field of the tegmina apically truncato-emarginate and with but three instead of six principal veins as in *cicindeloides*. Wings with the apical section caudate but not projecting beyond the tegmina. Ovipositor shorter than the posterior femora, moderately arcuate, rather broad and subequal in width; superior margin of the apical section with an oblique truncation, apex finely serrulate above and below. Posterior femora about two-thirds as long as the tegmina.

General color very deep metallic blue in the male, deep metallic

greenish in the female; eyes dull brown; interocular region with an obscure transverse elliptical spot of brick red; limbs orange-ochraceous.

Measurements.

	♂	♀
Length of body,	10.5 mm.	8.1 mm.
Length of pronotum,	1.9 "	2.2 "
Greatest width of pronotum,	2 "	2 "
Length of tegmina,	6.2 "	6.5 "
Greatest width of dorsal field of tegmina,	3.5 "	1.7 "
Length of posterior femora,	5.2 "	5.5 "
Length of ovipositor,		3.3 "

The types are the only specimens which have been examined.

Genus **PARÆCANTHUS** Saussure.

1859. *Parocanthus* (laps. p. *Paræcanthus*) Saussure, Revue et Magasin de Zoologie, 2e sér., XI, p. 317.

Type.—*P. mexicanus* Saussure.

Paræcanthus mexicanus Saussure.

1859. *P[arocanthus] mexicanus* Saussure, Revue et Magasin de Zoologie, 2e sér., XI, p. 317. [No locality given.]

Alta Mira, Tamaulipas. June 25, 1903. (M. E. Hoag.) One female.

This species has been recorded from Tampico, Tamaulipas, to Teapa, Tabasco.